Patent claims:

1. An oligonucleotide which binds to a nucleic acid which codes for one of the isoforms of human tenascin or parts thereof and inhibits its expression, where the oligonucleotide has a length of 7 to 15 nucleotide units and where the oligonucleotide can optionally be modified, and the physiologically tolerable salts of the oligonucleotide.

2. The oligonucleotide as claimed in claim 1, in which the oligonucleotide binds to a region of the nucleic acid which comprises

a) a part of the 5'-noncoding region and/or
the translation start or

b) the translation start and/or
a part of the coding region or

c) a part of the coding region and/or
a part of the 3'-noncoding region.

3. The oligonucleotide as claimed in claim 1, in which the oligonucleotide has one of the sequences SEQ ID NO. 2 to SEQ ID NO. 20, where SEQ ID NO. 2 to SEQ ID NO. 20 have the following meaning:

SEQ. ID NO. 2: 3'- GGTTTGGGTGGAGGTGG -5'
SEQ. ID NO. 3. 3'- GGAGGTGGTACCCCCGG -5'
SEQ. ID NO. 4: 3'- GGTGGTACCCCCGG -5'
SEQ. ID NO. 5: 3'- GGAGGTGGTACCCC -5'
SEQ. ID NO. 6 3'- AGAAAGAACGAAAGGAA -5'
SEQ. ID NO. 7: 3'- GGAGGTGGTACC -5'
SEQ. ID NO. 8: 3'- GGAGCGATGGCTTCCA -5'
SEQ. ID NO. 9: 3'- AAAGGAACGGGAGCG -5'
SEQ. ID NO. 10: 3'- GGTCGGTTTGGGTGG -5'

SEQ. ID NO. 11: 3'- CTTACAGGTCCGTTGA -5'
SEQ. ID NO. 12: 3'- GGCCGTGTTCGCTGT -5'
SEQ. ID NO. 13: 3'- TCACCCCTCTTTCTGG -5'
SEQ. ID NO 14: 3'- GGACACCGACACGG -5'
SEQ. ID NO. 15: 3'- AACGGGAGCGATGG -5'
SEQ. ID NO. 16: 3'- ATCTCGGGGTCGTC -5'
SEQ. ID NO. 17: 3'- AAAGAACGAAAGGAA -5'
SEQ. ID NO. 18: 3'- GGTGGTACCCC -5'
SEQ. ID NO. 19: 3'- CCCGGTACTGA -5'
SEQ. ID NO. 20: 3'- CCACAGAAAGAAC -5'

4. The oligonucleotide as claimed in one or more of claims 1 to 3, in which the oligonucleotide has one or more modifications which are located on certain nucleoside positions and/or internucleoside bridges.

5. The oligonucleotide as claimed in one or more of claims 1 to 4, in which the chemical modifications can be selected independently of one another from the group consisting of the chemical modifications a) to h):

a) the replacement of a phosphoric acid diester internucleoside bridge by a modified phospho bridge,

b) the replacement of a phosphoric acid diester internucleoside bridge by a "dephospho" bridge,

c) the replacement of a sugar phosphate unit by another unit,

d) the replacement of a β-D-2'-deoxyribose unit by a modified sugar unit,

e) the modification or the replacement of a natural nucleoside base by a modified nucleoside base,

f) the conjugation of the oligonucleotide to a molecule which adapts the properties of the oligonucleotide to a specific requirement,

g) the conjugation of the oligonucleotide to a 2'5-bonded oligoadenylate or a derivative thereof, the conjugation of the 2'5'-bonded oligoadenylate or a derivative thereof optionally taking place via a linker,

and

h) the introduction of a 3'-3' inversion and/or 5'-5' inversion at the 3' or 5' end of the oligonucleotide.

6. The oligonucleotide as claimed in one or more of claims 1 to 5, the oligonucleotide containing one or more chemical modifications which can be selected independently of one another from the group consisting of the chemical modifications a) to h):

a) the replacement of a phosphoric acid diester internucleoside bridge by a modified phospho bridge,

where a modified phospho bridge is a phosphorothioate, phosphorodithioate, $NR^1R^{1'}$-phosphoramidate, boranophosphate, phosphate-(C_1-C_{21})-O-alkyl ester, phosphate-[(C_6-C_{12})aryl-(C_1-C_{21})-O-alkyl] ester, (C_1-C_8)alkylphosphonate or (C_6-C_{12})-arylphosphonate bridge,

where

R^1 and $R^{1'}$ independently of one another are selected from the group comprising hydrogen, (C_1-C_{18})-alkyl, (C_6-C_{20})-aryl, (C_6-C_{14})-aryl-(C_1-C_8)-alkyl or

R^1 and $R^{1'}$ together with the nitrogen atom carrying them, form a 5- to 6-membered heterocyclic ring which can additionally contain a further heteroatom from the group consisting of O, S and N;

b) the replacement of a phosphoric acid diester internucleoside bridge by a "dephospho" bridge,

where a "dephospho bridge" is a formacetal, 3'-thioformacetal, methylhydroxylamine, oxime, methylenedimethylhydrazo, dimethylenesulfone or silyl bridge,

c) the complete or partial replacement of the sugar phosphate backbone (replacement of sugar phosphate units) by other units,

where another unit is suitable for synthesizing a "morpholine derivative" oligomer, a polyamide nucleic acid ("PNA") or a phosphomonoacid ester nucleic acid,

d) the replacement of a β-D-2'-deoxyribose unit by a modified sugar unit,

where a modified sugar unit is an α-D-2'-deoxyribose, L-2'-deoxyribose, 2'-F-2'-deoxyribose, 2'-O-(C_1-C_6)alkylribose, 2'-O-(C_2-C_6)alkenylribose, 2'-[O-(C_1-C_6)alkyl-O-(C_1-C_6)alkyl]ribose, 2'-NH_2-2'-deoxyribose, β-D-xylofuranose, α-arabinofuranose, 2,4-dideoxy-β-D-erythro-hexopyranose, a carbocyclic sugar analog, an open-chain sugar analog or a bicyclo sugar analog,

e) the replacement of a natural nucleoside base by a modified nucleoside base,

where a modified nucleoside base is 5-(hydroxymethyl)uracil, 5-aminouracil, pseudouracil, dihydrouracil, 5-(C_1-C_6-alkyluracil, 5-(C_2-C_6)-alkenyluracil, 5-(C_2-C_6)-alkynyluracil, 5-(C_1-C_6)-alkylcytosine, 5-(C_2-C_6)-alkenylcytosine, 5-(C_2-C_6)-alkynylcytosine, 5-fluorouracil, 5-fluorocytosine, 5-chlorouracil, 5-chlorocytosine, 5-bromouracil, 5-

bromocytosine, a 7-deaza-7-substituted purine, or a 7-deaza-8-substituted purine,

f) conjugation to a molecule,

where the molecule is a polylysine, intercalator, fluorescent molecule, crosslinker, lipophilic molecule, lipid, steroid, vitamin, polyethylene glycol, oligoethylene glycol, (C_{12}-C_{18})-alkyl phosphate diester or –O-CH_2-CH(OH)-O-(C_{12}-C_{18})-alkyl group,

g) conjugation to a 2'5'-linked oligoadenylate or a derivative thereof

where a 2'5'-linked oligoadenylate or a derivative thereof is a 2'5'-linked triadenylate, 2'5'-linked tetraadenylate, 2'5'-linked pentaadenylate or cordycepin (2'5'-linked 3'-deoxyadenylate),

where the conjugation optionally takes place via a linker and

where the 5' end of the 2'5'-linked oligoadenylate optionally contains a phosphate, diphosphate or triphosphate group and

h) the introduction of a 3'-3' and/or 5'-5' inversion at the 3'- and/or at the 5'-end of the oligonucleotide.

7. The oligonucleotide as claimed in one or more of claims 1 to 6, in which either a) only certain phosphodiester internucleoside bridges or

b) all phosphodiester internucleoside bridges

are modified.

8. The oligonucleotide as claimed in one or more of claims 1 to 7, in which 1 – 5 terminal internucleoside bridges are modified at the 5- and/or at the 3'- end of the oligonucleotide.

9. The oligonucleotide as claimed in one or more of claims 1 to 8, in which the internucleoside bridges located at the 3'- and/or 5'- end of nonterminal nucleosides which contain a pyrimidine base are modified.

10. The oligonucleotide as claimed in one or more of claims 1 to 9, in which the oligonucleotide has a sequence selected from the group consisting of the sequences SEQ ID NO. 21 to SEQ ID NO. 39, the sequences SEQ ID NO. 21 to SEQ ID NO. 39 having the following meaning:

SEQ ID NO. 21 3'- GsGsTsTsTGGGTsGGAGGsTsGsG -5',
SEQ ID NO. 22: 3'- GsGsAsGGTsGGTsACsCCsCCsGsG -5',
SEQ ID NO. 23. 3'- GsGsTGGTsACsCsCCsCsGsG -5',
SEQ ID NO. 24: 3'- GsGsAGGTsGGTsACsCsCsC -5',
SEQ ID NO. 25 3'- AsGsAAAGAAsCsGAAAGGsAsA -5',
SEQ ID NO. 26. 3'- GsGsAGGTsGGTsAsCsC -5',
SEQ ID NO. 27: 3'- GsGsAGCsGATsGGCsTsTsCsCsA -5',
SEQ ID NO. 28: 3'- AsAsAGGAACsGGGAGsCsG -5',
SEQ ID NO. 29: 3'- GsGsTCGGTsTsTGGGTsGsG -5',
SEQ ID NO. 30: 3'- CsTsTACAGGTsCsCGTsTsGsA -5',
SEQ ID NO. 31: 3'- GsGsCsCGsTGTsTCGCsTsGsT -5',
SEQ ID NO. 32 3'- TsCsACsCCsCTsCsTTsTsCsTsGsG -5',
SEQ ID NO. 33: 3'- GsGsAsCACsCGACsACsGsG -5',
SEQ ID NO. 34 3'- AsAsCsGGGAGCGATsGsG -5',
SEQ ID NO. 35. 3'- AsTsCsTCGGGGTsCsGsTsC -5',
SEQ ID NO. 36. 3'- AsAsAGAACsGAAAGGsAsA -5',
SEQ ID NO. 37 3'- GsGsTGGTsACsCsCsC -5',
SEQ ID NO. 38: 3'- CsCsCsGGTsACsTsGsA -5' and
SEQ ID NO. 39: 3'- CsCsAsCAGAAAGsAsAsC -5',

where "s" indicates the position of a modified internucleoside bridge.

11. The oligonucleotide as claimed in one or more of claims 1 to 8, where the oligonucleotide has one of the sequences SEQ ID NO. 40 to SEQ ID NO. 58, the sequences SEQ ID NO. 40 to SEQ ID NO. 58 having the following meaning

SEQ ID NO. 40: 3'- GyGyTyTyTyGxGxGxTxGxGxAxGyGyTyGyG -5',
SEQ ID NO. 41: 3'- GyGyAyGyGyTxGxGxTxAxCxCxCyCyCyGyG -5',
SEQ ID NO. 42: 3'- GyGyTxGxGxTxAxCxCxCxCyCyGyG -5',
SEQ ID NO. 43: 3'- GyGyAyGyGxTxGxGxTxAxCyCyCyC -5',
SEQ ID NO. 44: 3'- AyGyAyAxAxGxAxAxCxGxAxAxAyGyGyAyA -5',
SEQ ID NO. 45: 3'- GyGyAxGxGxTxGxGxTxAyCyC -5',
SEQ ID NO. 46: 3'- GyGyAxGxCxGxAxTxGyGyCyTyTyCyCyA -5',
SEQ ID NO. 47: 3'- AyAyAyGxGxAxAxCxGxGyGyAyGyCyG -5',
SEQ ID NO. 48: 3'- GyGyTyCxGxGxTxTxTxGxGyGyTyGyG -5',
SEQ ID NO. 49: 3'- CyTyTyAxCxAxGxGxTxCxCxGyTyTyGyA -5',
SEQ ID NO. 50: 3'- GyGyCyCxGxTxGxTxTxCxGyCyTyGyT -5',
SEQ ID NO. 51: 3'- TyCyAyCxCxCxCxTxCxTxTyTyCyTyGyG -5',
SEQ ID NO. 52: 3'- GyGyAyCxAxCxCxGxAxCxAyCyGyG -5',
SEQ ID NO. 53: 3'- AyAyCyGxGxGxAxGxCxGxAyTyGyG -5',
SEQ ID NO. 54: 3'- AyTyCyTxCxGxGxGxGxTxCxGyTyC -5',
SEQ ID NO. 55: 3'- AyAyAyGxAxAxCxGxAxAxAxGyGyAyA -5',
SEQ ID NO. 56: 3'- GyGyTxGxGxTxAxCxCyCyC -5',
SEQ ID NO. 57: 3'- CyCxCxGxGxTxAxCyTyGyA -5' and
SEQ ID NO. 58: 3'- CyCyAxCxAxGxAxAxAxGyAyAyC -5',

where

"x" independently of one another represents a phosphodiester internucleoside bridge or a modified internucleoside bridge and

"y" independently of one another represents the replacement of a sugar phosphate unit or of a β-D-2'-deoxyribose unit, the modified β-D-2'-deoxyribose unit being located at the 3'- end of "y".

12. The oligonucleotide as claimed in claim 11, where "y" represents 2'-O-methyl-, 2'-O-propyl- or 2'-methoxyethoxyribose or a PNA unit.

13. The use of an oligonucleotide as claimed in one or more of claims 1 to 12 for the inhibition of the expression of tenascin.

14. The use of an oligonucleotide as claimed in one or more of claims 1 to 12 as a tool in molecular biology.

15. The use of an oligonucleotide as claimed in one or more of claims 1 to 12 as a diagnostic.

16. The use of an oligonucleotide as claimed in one or more of claims 1 to 12 as a pharmaceutical.

17. The use of an oligonucleotide as claimed in one or more of claims 1 to 12 for the production of a pharmaceutical.

18. A pharmaceutical comprising one or more oligonucleotides as claimed in one or more of claims 1 to 12 and, if appropriate, one or more pharmaceutical vehicles and/or additives.

19. The use of a pharmaceutical as claimed in claim 18 in combination with photochemotherapy and/or the transplantation of cultured melanocytes and/or treatment with steroids and/or treatment with placenta extracts.

20. A process for the production of a pharmaceutical, an efficacious dose of one or more oligonucleotides as claimed in one or more of claims 1 to 12 being mixed with one or more pharmaceutical vehicles and/or additives.

21. A process for the preparation of an oligonucleotide as claimed in one or more of claims 1 to 12, the oligonucleotide being chemically synthesized on a solid phase.

22. A diagnostic comprising one or more oligonucleotides as claimed in one or more of claims 1 to 12.

23. A test kit comprising one or more oligonucleotides as claimed in one or more of claims 1 to 12.